Dell OptiPlex 3020–Mini Tower
Owner's Manual

Regulatory Model: D15M
Regulatory Type: D15M001

Notes, Cautions, and Warnings

NOTE: A NOTE indicates important information that helps you make better use of your computer.

CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

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1

Working on Your Computer

Before Working Inside Your Computer

Use the following safety guidelines to help protect your computer from potential damage and to help to ensure your personal safety. Unless otherwise noted, each procedure included in this document assumes that the following conditions exist:

- You have read the safety information that shipped with your computer.
- A component can be replaced or--if purchased separately--installed by performing the removal procedure in reverse order.

WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance

CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.

CAUTION: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface, such as a connector on the back of the computer.

CAUTION: Handle components and cards with care. Do not touch the components or contacts on a card. Hold a card by its edges or by its metal mounting bracket. Hold a component such as a processor by its edges, not by its pins.

CAUTION: When you disconnect a cable, pull on its connector or on its pull-tab, not on the cable itself. Some cables have connectors with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before you disconnect the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before you connect a cable, ensure that both connectors are correctly oriented and aligned.

NOTE: The color of your computer and certain components may appear differently than shown in this document.

To avoid damaging your computer, perform the following steps before you begin working inside the computer.

1. Ensure that your work surface is flat and clean to prevent the computer cover from being scratched.
2. Turn off your computer (see Turning Off Your Computer).

   CAUTION: To disconnect a network cable, first unplug the cable from your computer and then unplug the cable from the network device.

3. Disconnect all network cables from the computer.
4. Disconnect your computer and all attached devices from their electrical outlets.
5. Press and hold the power button while the computer is unplugged to ground the system board.
6. Remove the cover.

CAUTION: Before touching anything inside your computer, ground yourself by touching an unpainted metal surface, such as the metal at the back of the computer. While you work, periodically touch an unpainted metal surface to dissipate static electricity, which could harm internal components.

Turning Off Your Computer

CAUTION: To avoid losing data, save and close all open files and exit all open programs before you turn off your computer.

1. Shut down the operating system:
   - In Windows 8:
     * Using a touch-enabled device:
       a. Swipe in from the right edge of the screen, opening the Charms menu and select **Settings**.
       b. Select the and then select **Shut down**
     * Using a mouse:
       a. Point to upper-right corner of the screen and click **Settings**.
       b. Click the and select **Shut down**.
   - In Windows 7:
     1. Click **Start**.
     2. Click **Shut Down.**

     or

     1. Click **Start**.
     2. Click the arrow in the lower-right corner of the **Start** menu as shown below, and then click **Shut Down.**.

2. Ensure that the computer and all attached devices are turned off. If your computer and attached devices did not automatically turn off when you shut down your operating system, press and hold the power button for about 6 seconds to turn them off.

After Working Inside Your Computer

After you complete any replacement procedure, ensure you connect any external devices, cards, and cables before turning on your computer.

1. Replace the cover.

CAUTION: To connect a network cable, first plug the cable into the network device and then plug it into the computer.

2. Connect any telephone or network cables to your computer.
3. Connect your computer and all attached devices to their electrical outlets.
4. Turn on your computer.
5. If required, verify that the computer works correctly by running the Dell Diagnostics.

2

Removing and Installing Components

This section provides detailed information on how to remove or install the components from your computer.

Recommended Tools

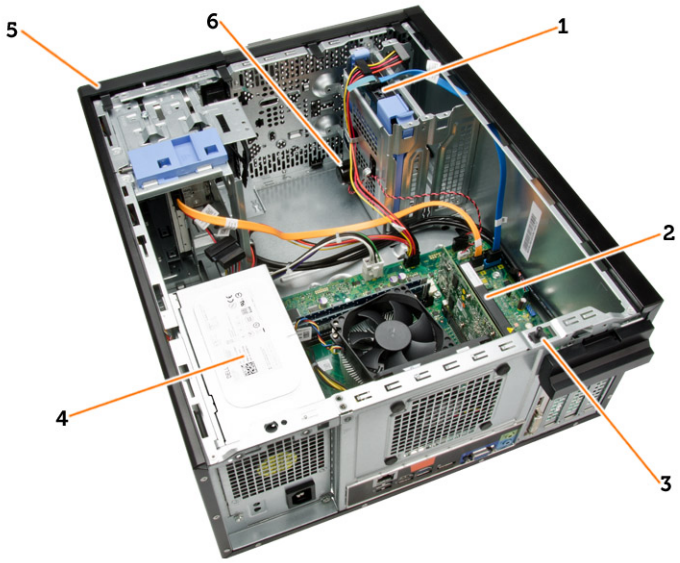
The procedures in this document may require the following tools:

- Small flat-blade screwdriver
- Phillips screwdriver
- Small plastic scribe

System Overview

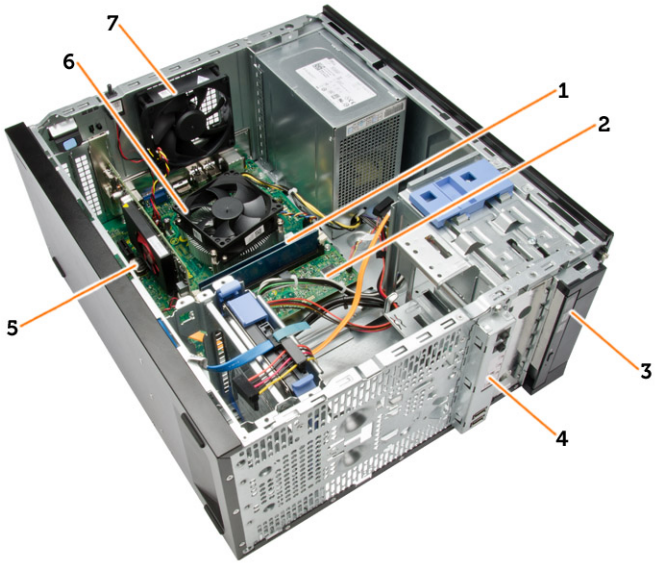
The figure below displays the inside view of the Mini Tower after the base cover has been removed. The call outs show the names and the layout of the components inside the computer.

Inside view



1. hard drive
2. expansion card
3. intrusion switch
4. power supply unit

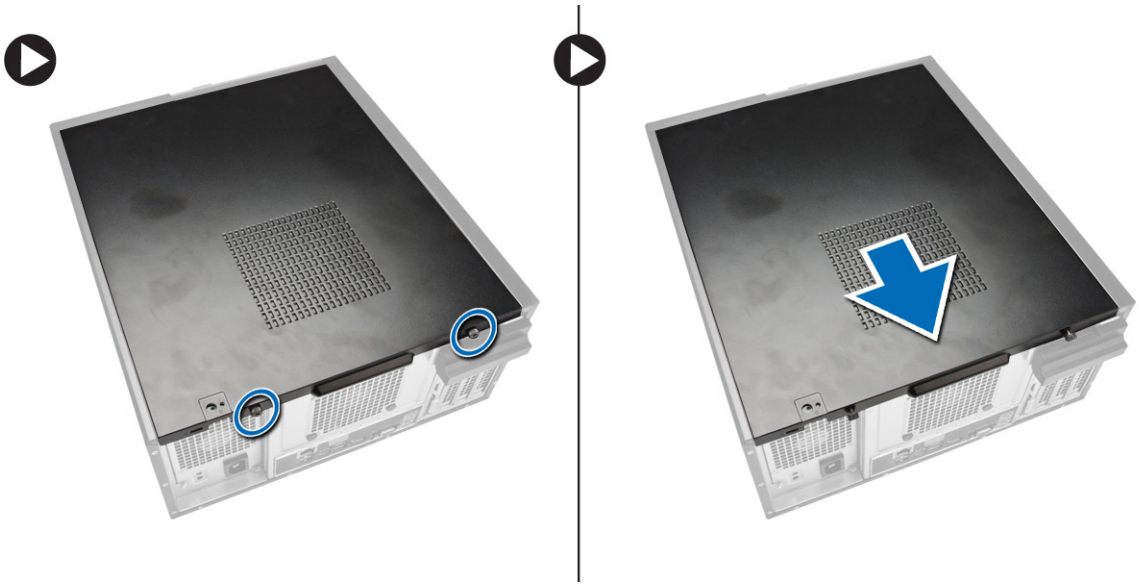
5. front bezel
6. speaker



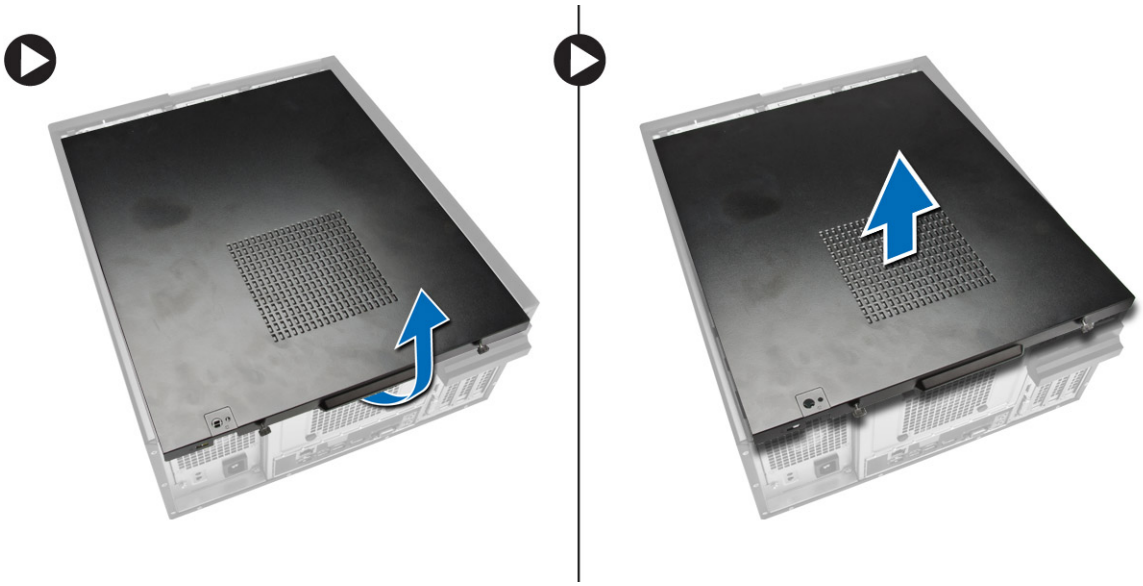
1. memory module
2. system board
3. optical drive
4. front i/o panel
5. coin cell
6. CPU cooler
7. system fan

Removing the Cover

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove the thumbscrews that secure the cover to the computer. Slide the cover from the computer.



3. Lift the cover upward to a 45–degree angle and remove it from the computer.

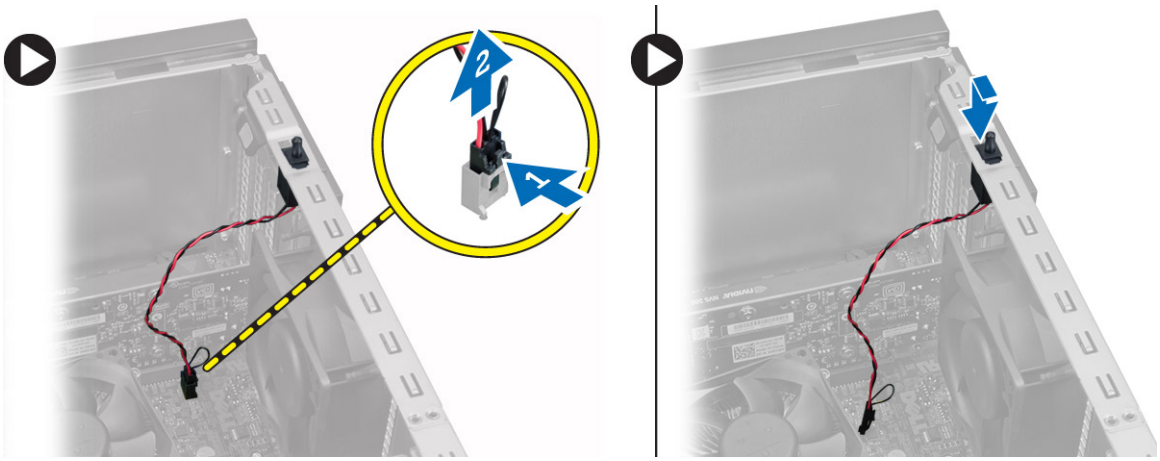


Installing the Cover

1. Place the cover on the computer.
2. Slide the computer cover towards the front of the chassis until it is fully engaged.
3. Tighten the thumbscrew in clockwise direction to secure the computer cover.
4. Follow the procedures in *After Working Inside Your Computer*.

Removing the Intrusion Switch

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove the:
   a) cover
   b) heatsink assembly
3. Perform the following steps as shown in the illustration:
   a) Press the intrusion-switch cable [1].
   b) Disconnect the intrusion-switch cable from the system board [2].
   c) Slide the intrusion switch toward the bottom of the chassis and remove it from the computer

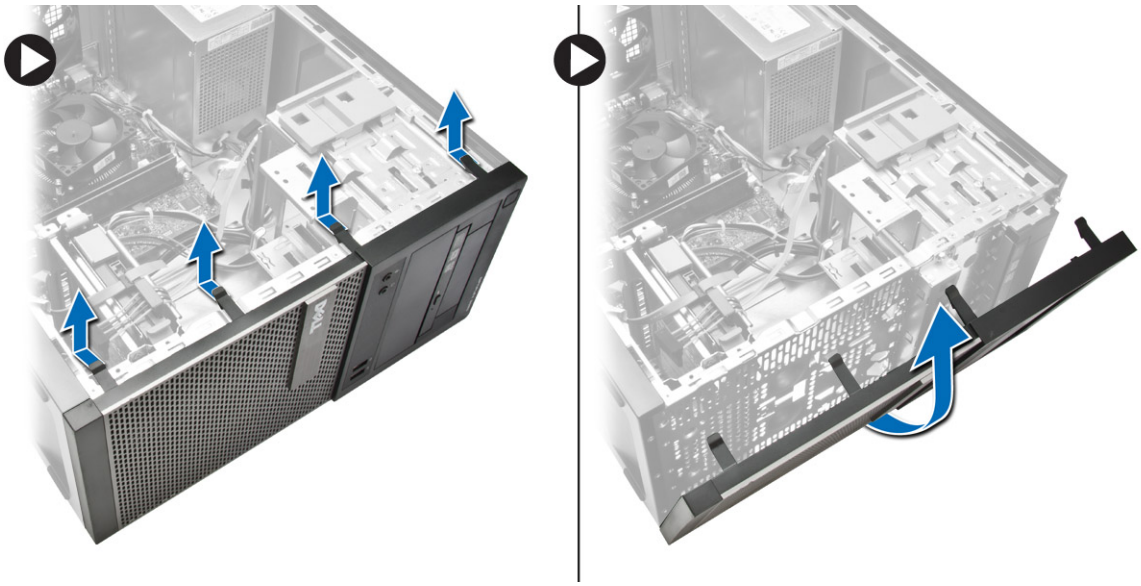


Installing the Intrusion Switch

1. Insert the intrusion-switch into the chassis rear and slide it outward to secure it.
2. Connect the intrusion-switch cable to the system board.
3. Install:
   a) heatsink assembly
   b) cover
4. Follow the procedures in *After Working Inside Your Computer*.

Removing the Front Bezel

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove the cover.
3. Pry the front bezel retention clips away from the chassis.
4. Rotate the bezel away from the computer to release the hooks on the opposite edge of the bezel from the chassis. Then, lift the chassis and remove the front bezel from the computer.

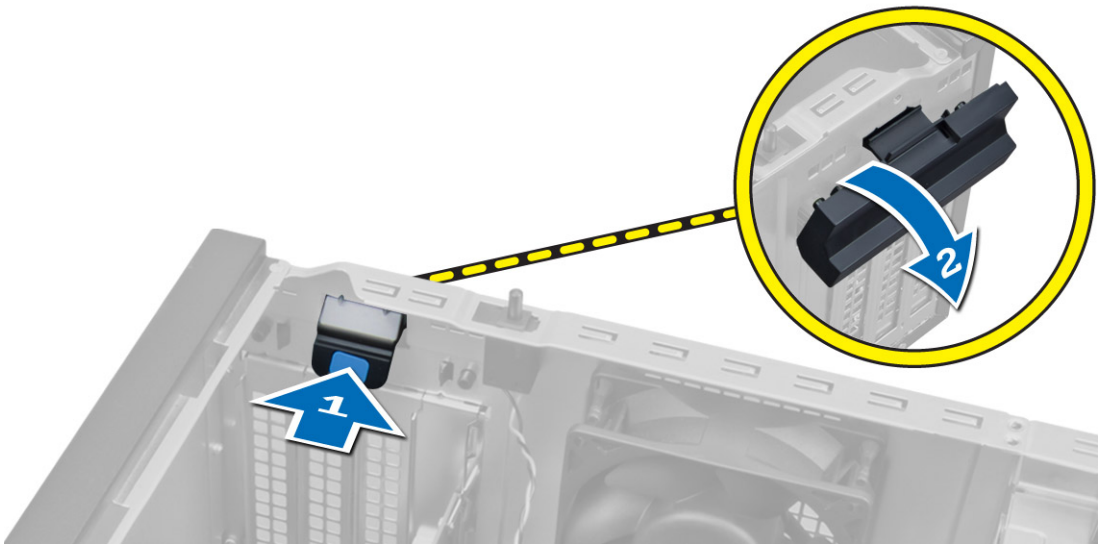


Installing the Front Bezel

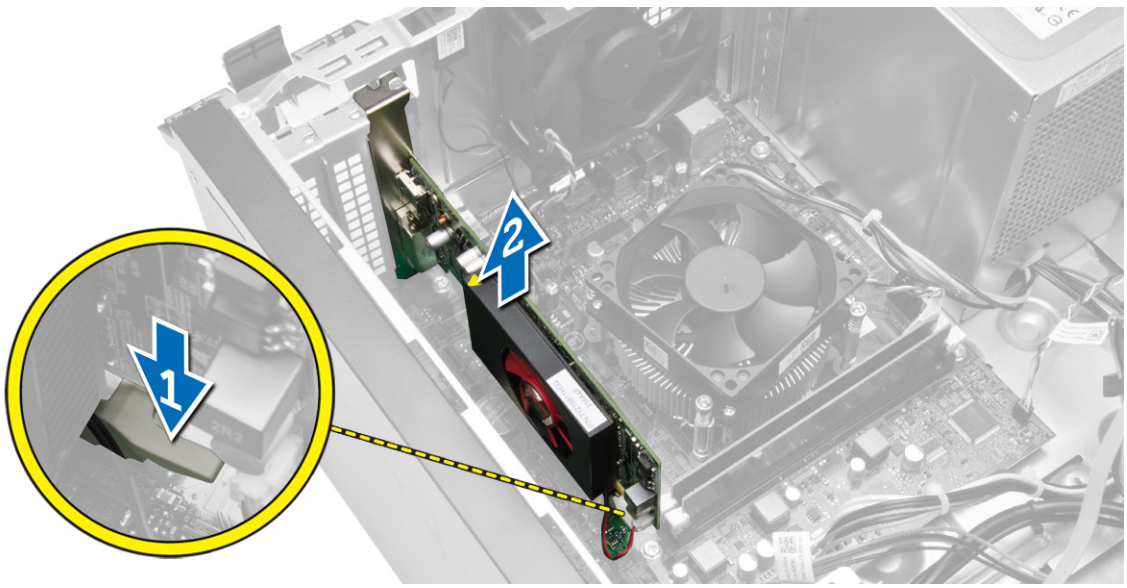
1. Insert the hooks along the bottom edge of the front bezel into the slots on the chassis front.
2. Push the bezel toward the computer to engage the front bezel retention clips until they click into place.
3. Install the cover.
4. Follow the procedures in *After Working Inside Your Computer*.

Removing The Expansion Card

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove the cover
3. Perform the following steps as shown in the illustration: and
   a) Press the tab [1].
   b) Pull the card-retension latch upward [2].



4. Perform the following steps as shown in the illustration:
   a) Pull the release lever away from the expansion card until you release the securing tab from the dent in the card. [1].
   b) Ease the card up and out of its connector and remove it from the computer. [2].



Installing the Expansion Card

1. Insert the expansion card in the connector on the system board and press down until secured.
2. Push the retention latch back to its position.
3. Install the cover.
4. Follow the procedures in *After Working Inside Your Computer*.

Memory Module Guidelines

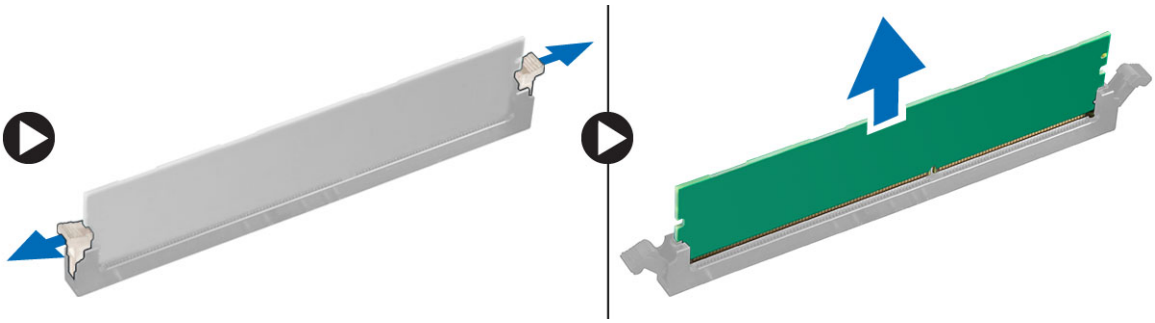
To ensure optimal performance of your computer, observe the following general guidelines when configuring your system memory:

- Memory modules of different sizes can be mixed (for example, 2 GB and 4 GB). But, all populated channels must have identical configurations.
- Memory modules must be installed beginning with the first socket.

  NOTE: The memory sockets in your computer may be labeled differently depending on the hardware configuration. For example, A1, A2 or 1,2,3.
- If the quad-rank memory modules are mixed with single or dual-rank modules, the quad-rank modules must be installed in the sockets with the white release levers.
- If memory modules with different speeds are installed, they operate at the speed of the slowest installed memory modules.

Removing the Memory

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
   a) cover
   b) expansion card
3. Press down on the memory retaining tabs on each side of the memory modules, and lift the memory modules out of the connectors on the system board.



Installing the Memory

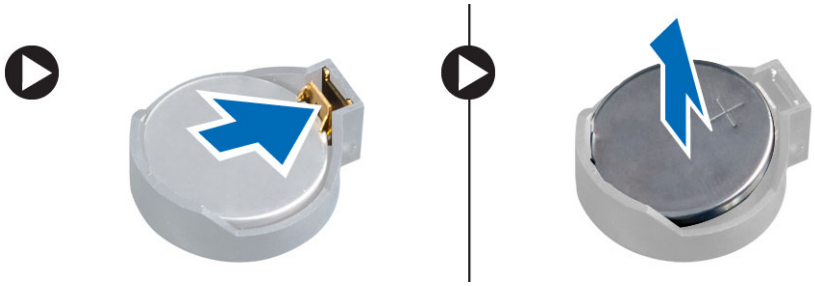
1. Align the notch on the memory-card with the tab in the system-board connector.
2. Press down on the memory module until the release tabs spring back to secure them in place.
3. Install :
   a) expansion card
   b) cover
4. Follow the procedures in *After Working Inside Your Computer*.

Removing the Coin-Cell Battery

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:

a) cover
b) expansion card(s)

3. Press the release latch away from the battery to allow the battery to pop-up from the socket and lift the coin-cell battery out of the computer.

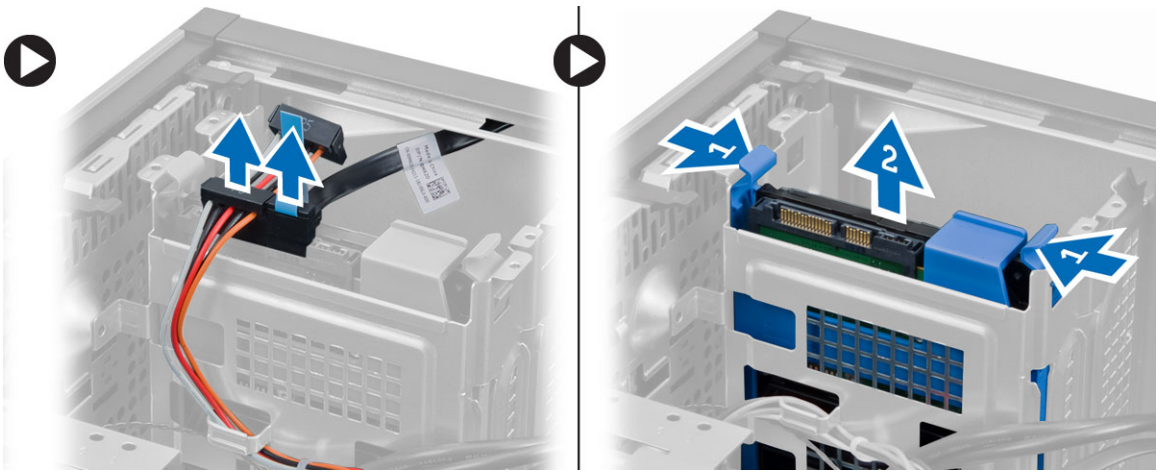


Installing the Coin-Cell Battery

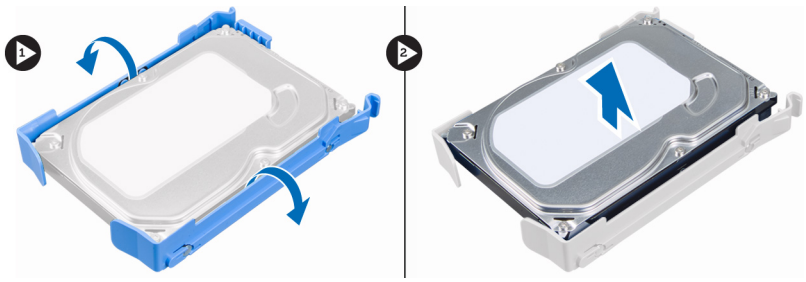
1. Place the coin cell battery in its slot on the system board and press until the release latch springs back into place and secures it.
2. Install:
   a) expansion card
   b) cover
3. Follow the procedures in *After Working Inside Your Computer*.

Removing the Hard Drive

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
   a) cover
   b) front bezel
3. Perform the following steps as shown in the illustration:
   a) Disconnect the data cable and the power cable from the back of the hard drive.
   b) Press the blue securing-bracket tabs inwards [1[.
   c) Lift the hard-drive bracket out of the hard-drive bay [2].



4. Flex the hard-drive bracket and remove the hard drive from the hard-drive bracket.

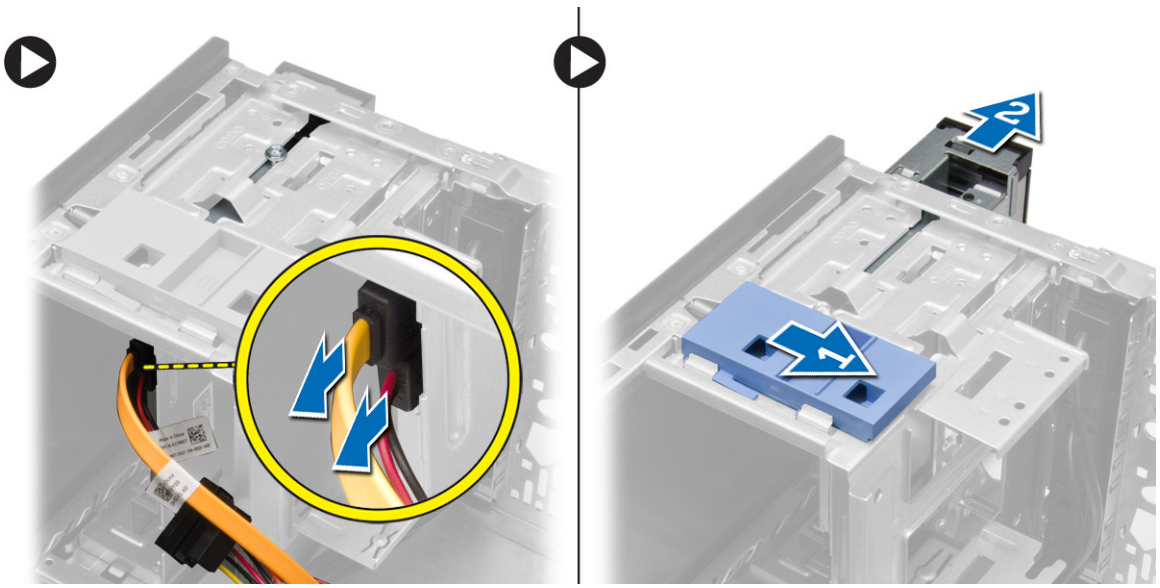


Installing the Hard Drive

1. Insert the hard drive into the hard-drive bracket.
2. Press the securing brackets inward and slide the hard-drive bracket into the bay.
3. Connect the data cable and the power cable to the back of the hard-drive.
4. Install the:
   a) front bezel
   b) cover
5. Follow the procedures in *After Working Inside Your Computer*.

Removing the Optical Drive

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
   a) cover
   b) front bezel
3. Perform the following steps as shown in the illustration:
   a) Disconnect the data cable and the power cable from the back of the optical drive.
   b) Slide and hold the optical-drive latch to unlock the optical drive [1].
   c) Pull the optical drive out of the computer [2].



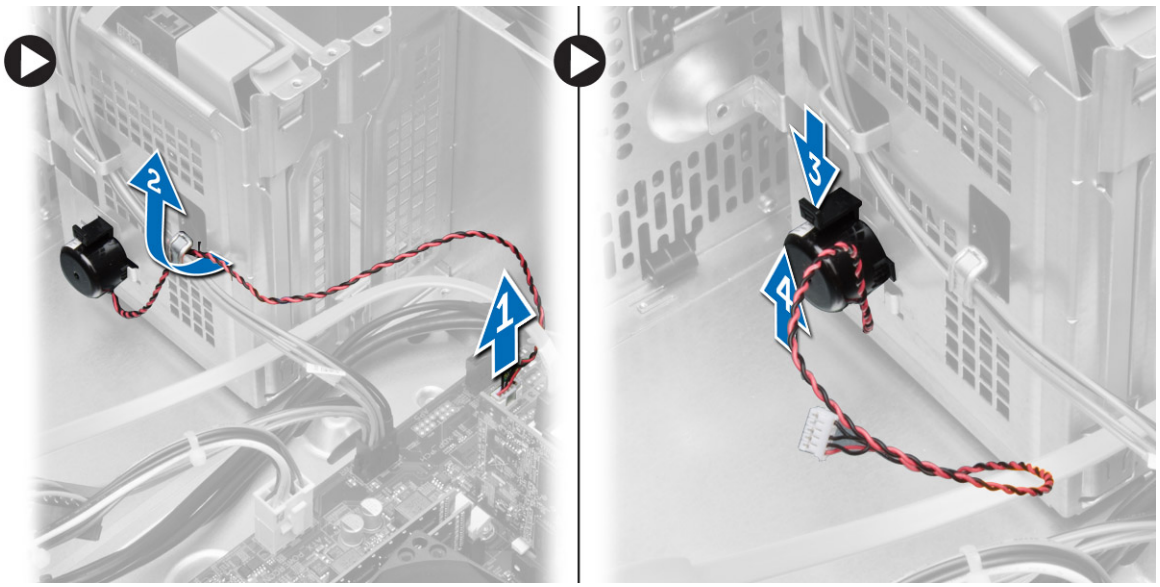
4. Repeat steps 3 remove the second optical drive (if available).

Installing the Optical Drive

1. Push the optical drive from the front toward the back of the computer till it is secured by the optical-drive latch.
2. Connect the data cable and power cable to the back of the optical drive.
3. Install the front bezel.
4. Install the cover.
5. Follow the procedures in *After Working Inside Your Computer*.

Removing the Speaker

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove the cover.
3. Perform the following steps as shown in the illustration:
   a) Disconnect the cable from system board [1].
   b) Release the speaker cable from system board [2].
   c) Press down the speaker-securing tab [3].
   d) Slide the speaker upwards to remove [4].

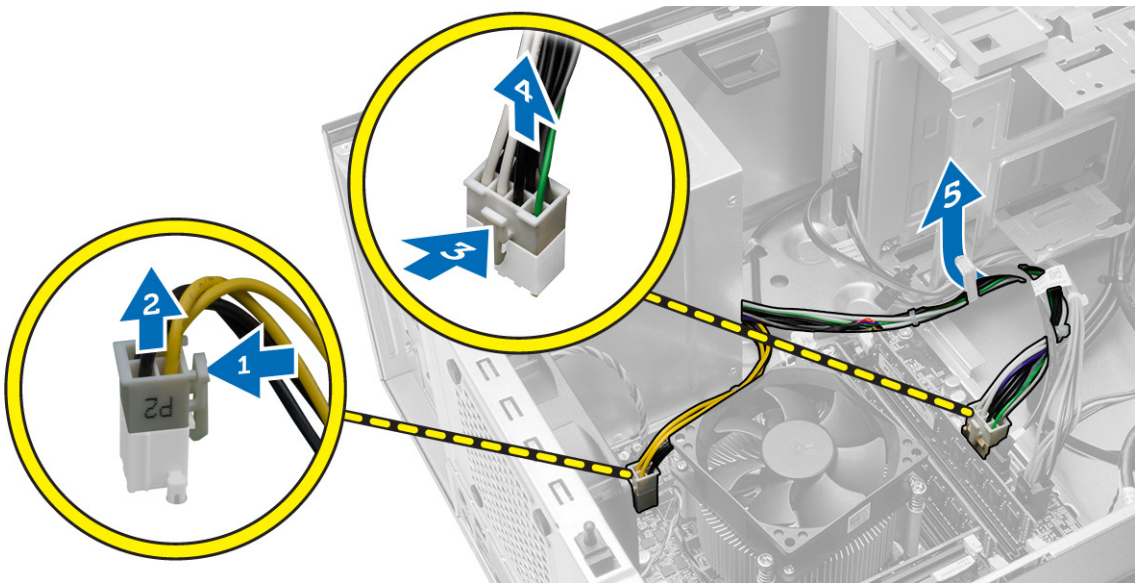


Installing the Speaker

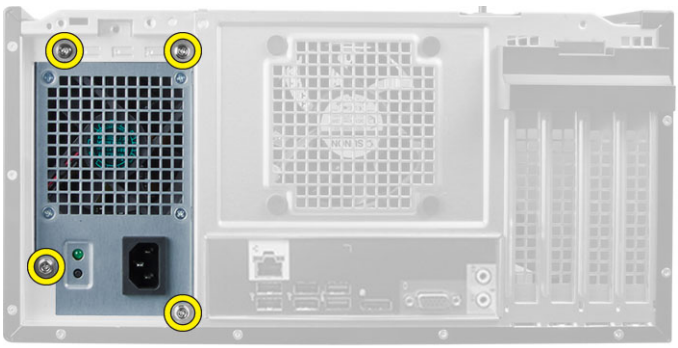
1. Slide the speaker downwards into its slot to secure it.
2. Thread the speaker cable into the chassis clip and connect the speaker cable to the system board.
3. Install the cover.
4. Follow the procedures in *After Working Inside Your Computer*.

Removing the Power Supply

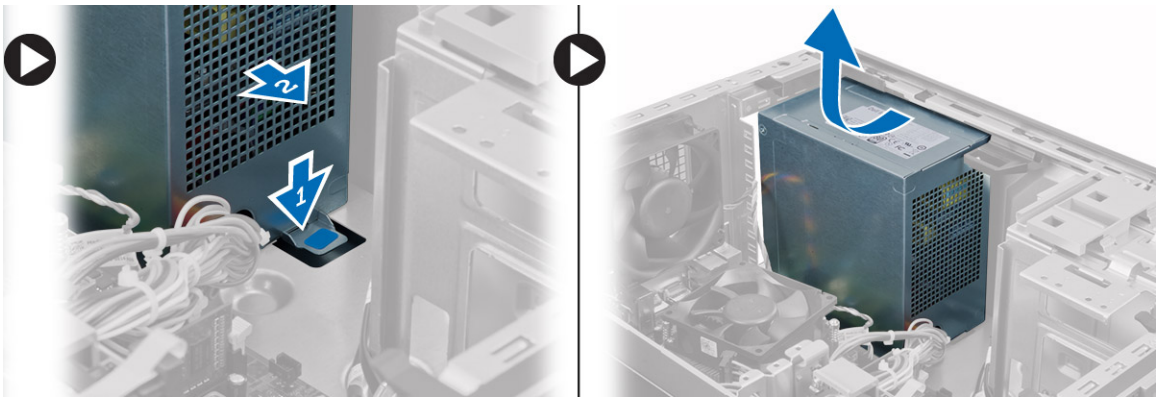
1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove the cover.
3. Perform the following steps as shown in the illustration:
   a) Press the 4–pin power cable [1].
   b) Disconnect the 4-pin power cables from the system board [2].
   c) Press the 8–pin power cable [3].
   d) Disconnect the 8-pin power cables from the system board [4].
   e) Unroute cables from the system board [5].



4. Remove the screws that secure the power supply to the back of the computer.



5. Perform the following steps as shown in the illustration:
   a) Push in on the blue release tab beside the power supply [1].
   b) Slide the power supply towards the front of the computer [2].
   c) Lift and remove the power supply out of the computer. [3].

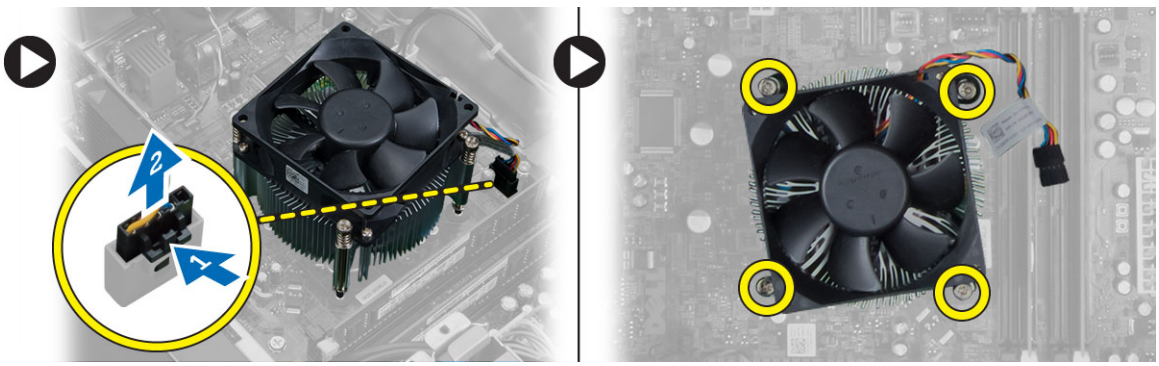


Installing the Power Supply

1. Place the power supply in the chassis and slide towards the back of the system to secure it.
2. Tighten the screws to secure the power supply to the back of the computer.
3. Connect the 4-pin and 8-pin power cables to the system board.
4. Thread the power cables through the chassis clips.
5. Install the cover.
6. Follow the procedures in *After Working Inside Your Computer*.

Removing the Heatsink Assembly

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove the cover.
3. Perform the following steps as shown in the illustration:
   a) Press the fan cable [1].
   b) Disconnect the fan cable from the system board [2].
   c) Loosen the captive screws in diagonal order and lift the heat-sink assembly away from the computer.



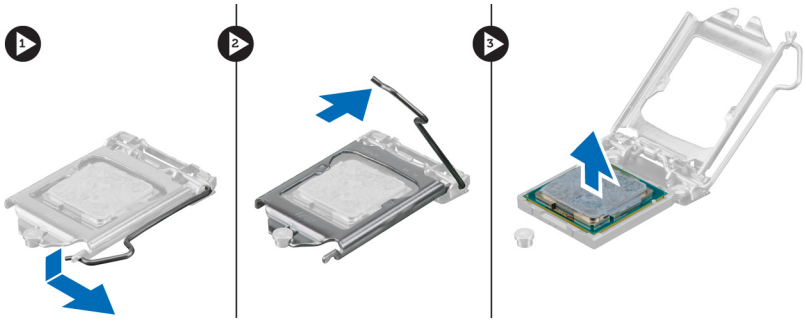
Installing the Heatsink Assembly

1. Place the heatsink assembly into the chassis.
2. Tighten the captive screws in diagonal order to secure the heatsink assembly to the computer.

3. Connect the fan cable to the system board.
4. Install the cover.
5. Follow the procedures in *After Working Inside Your Computer*.

Removing the Processor

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
   a) cover
   b) heat-sink assembly
3. Press the release lever down and then move it outward to release it from the retention hook. Lift the processor cover and remove the processor from the socket. Place it in an antistatic bag.

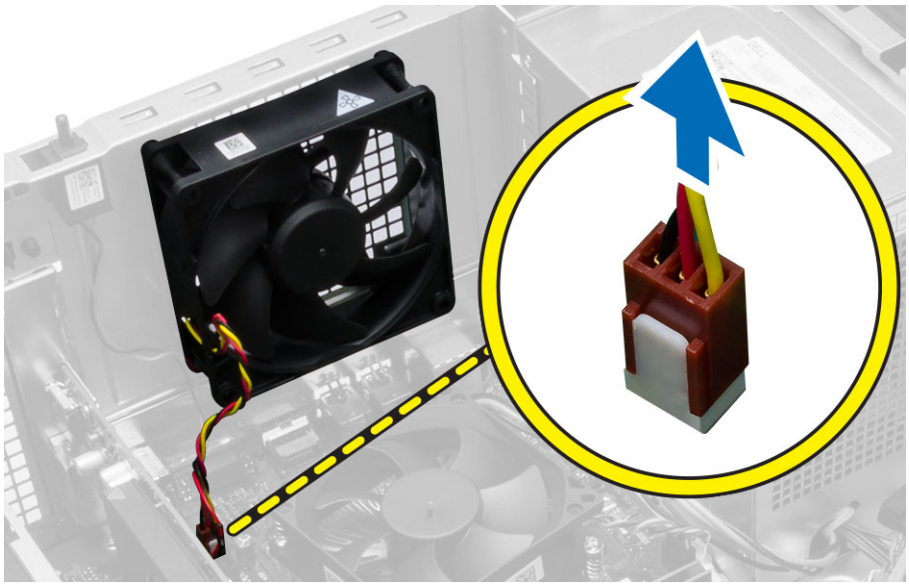


Installing the Processor

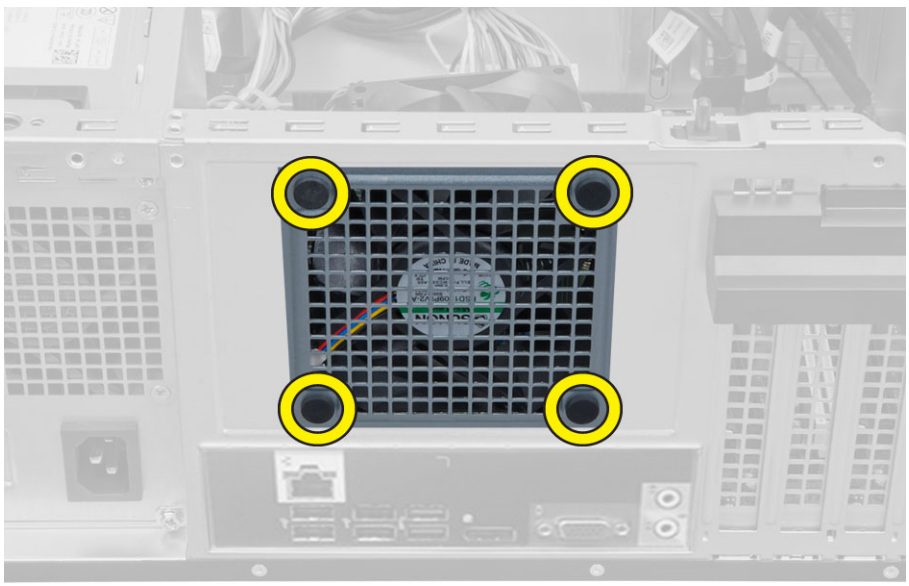
1. Insert the processor in the processor socket. Ensure the processor is properly seated.
2. Lower the processor cover.
3. Press the release lever down and then move it inward to secure it with the retention hook.
4. Install:
   a) heat-sink assembly
   b) cover
5. Follow the procedures in *After Working Inside Your Computer*.

Removing the System Fan

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove the cover.
3. Disconnect the system-fan cable from the system board



4. Pry and remove the system fan away from the four grommets securing it to the back of the computer.

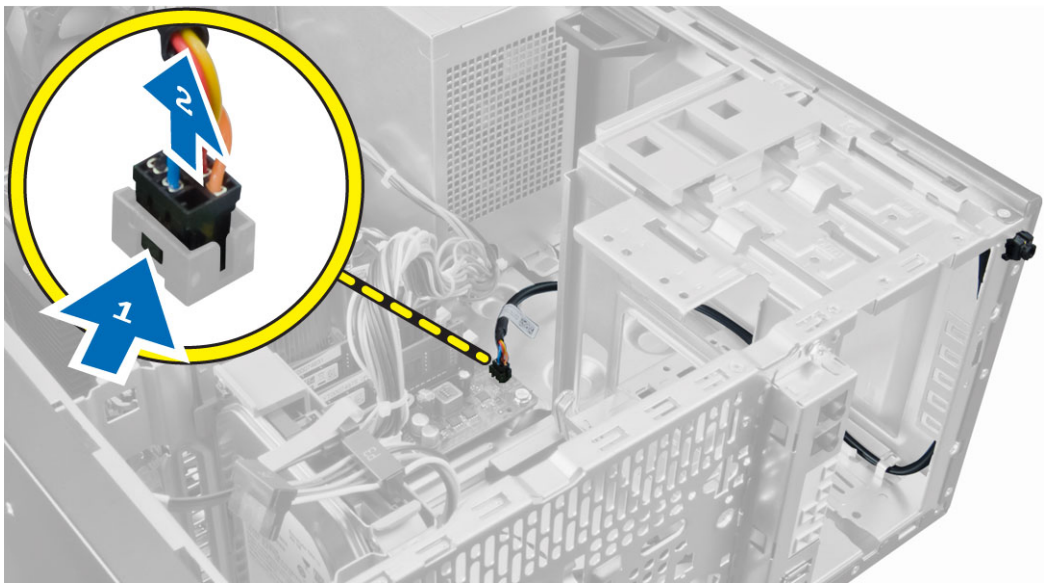


Installing the System Fan

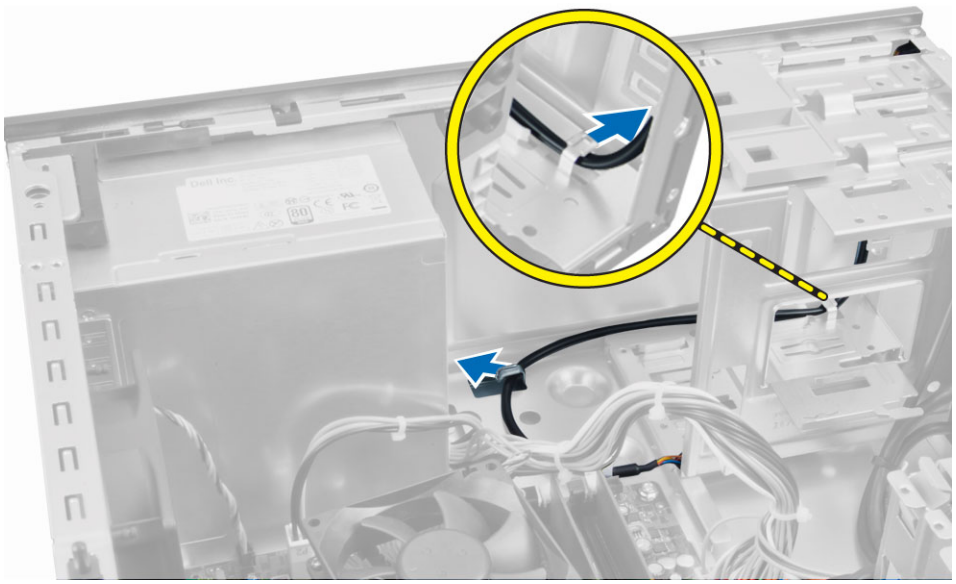
1. Place the system fan in the chassis.
2. Pass the four grommets through the chassis and slide outward along the groove to secure in place.
3. Connect the system-fan cable to the system board.
4. Install the cover.
5. Follow the procedures in *After Working Inside Your Computer*.

Removing the Power Switch

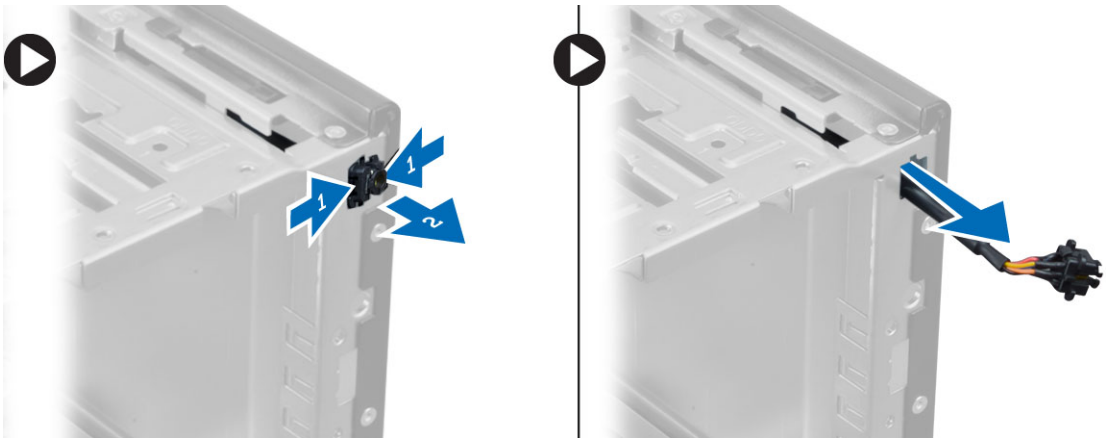
1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove the:
   a) cover
   b) front bezel
   c) optical drive
3. Perform the following steps as shown in the illustration:
   a) Press the power cable [1].
   b) Disconnect the power-switch cable from the system board [2].



4. Release the power-switch cable from the chassis clips.



5. Perform the following steps as shown in the illustration:
   a) Press the clips on both side of the power switch to release it from the chassis [1].
   b) Slide to remove the power switch along its cable from the computer [2].

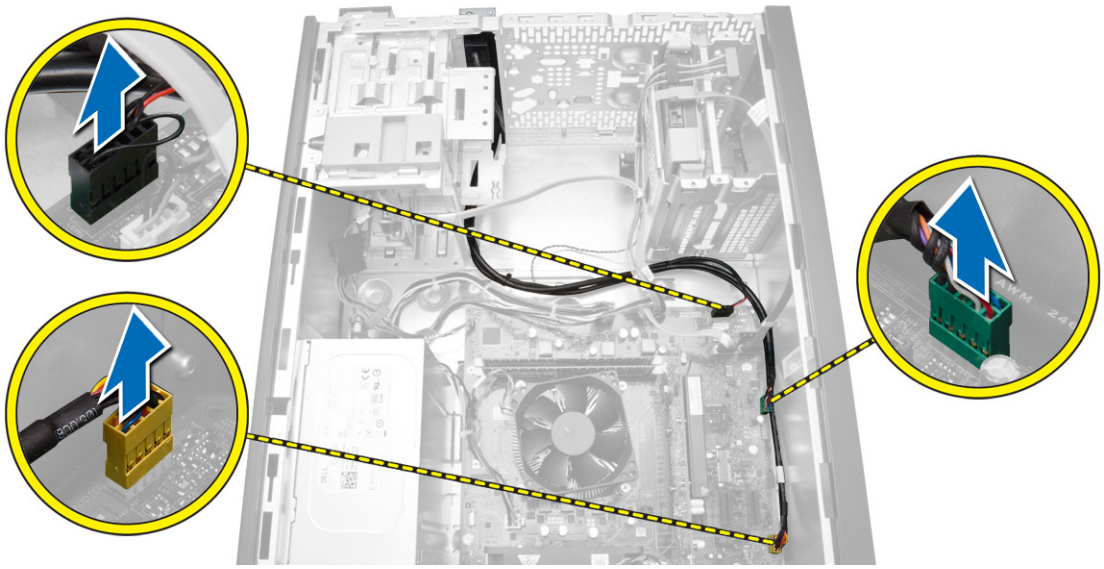


Installing the Power Switch

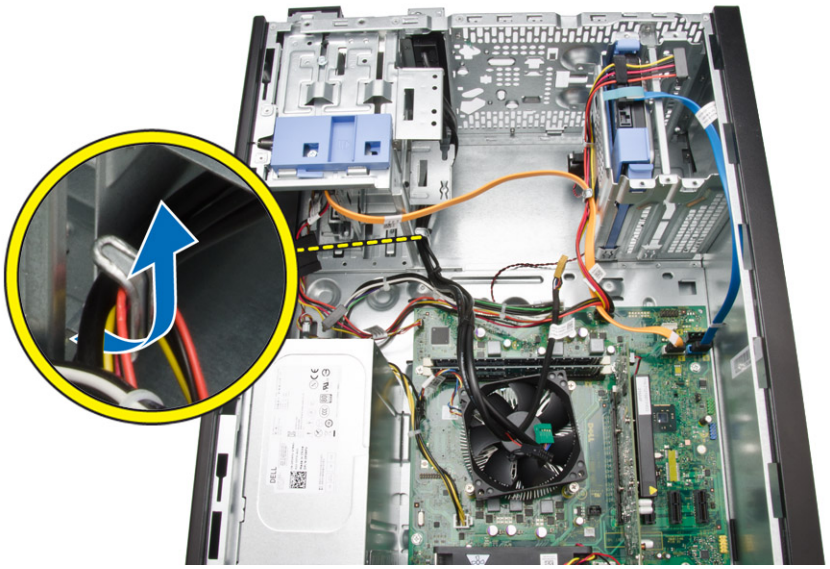
1. Slide the power switch in through the front of the computer.
2. Secure the power-switch cable to the chassis.
3. Thread the power-switch cable into the chassis clips.
4. Connect the power-switch cable to the system board.
5. Install the:
   a) optical drive
   b) front bezel
   c) cover
6. Follow the procedures in *After Working Inside Your Computer*.

Removing the I/O Panel

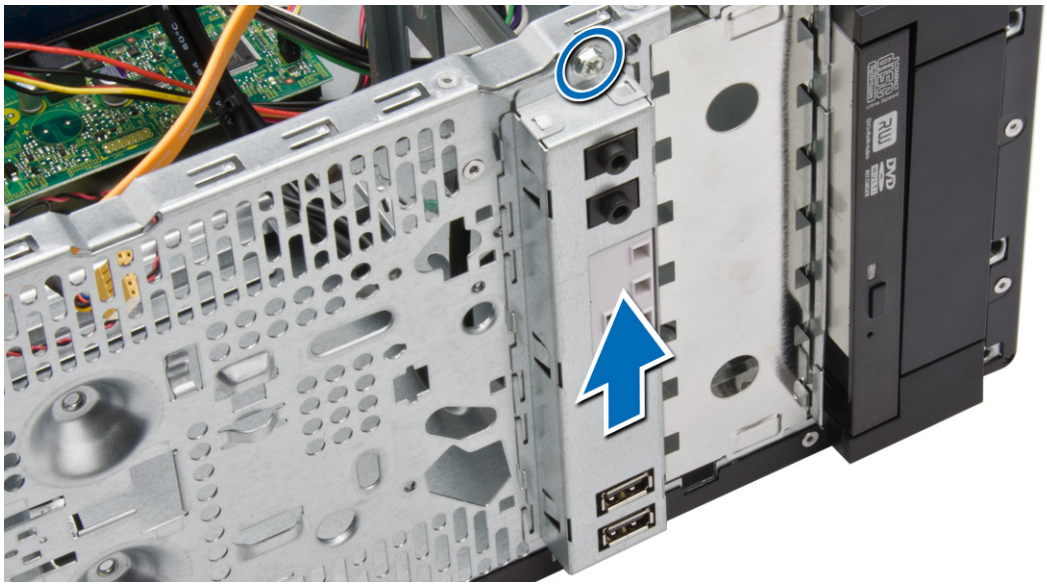
1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
   a) cover
   b) front bezel
3. Disconnect the I/O panel, data, and USB data cables from the system board.



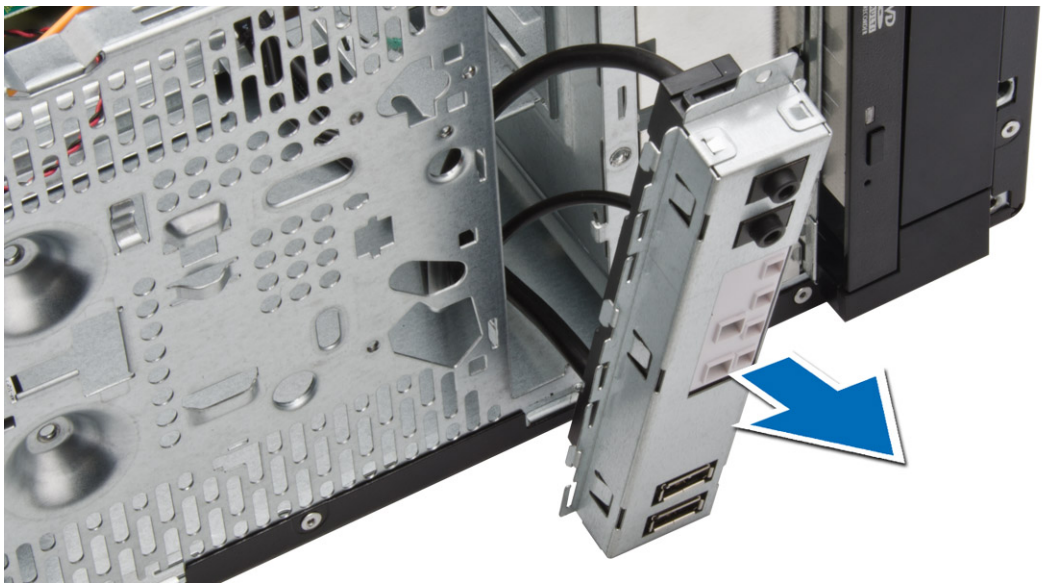
4. Unthread and release the I/O Panel, data cable and USB data cable from the clip on the computer.



5. Remove the screw that secures the I/O panel to the computer.



6. Release and pull the I/O panel along with its cable out of the computer.



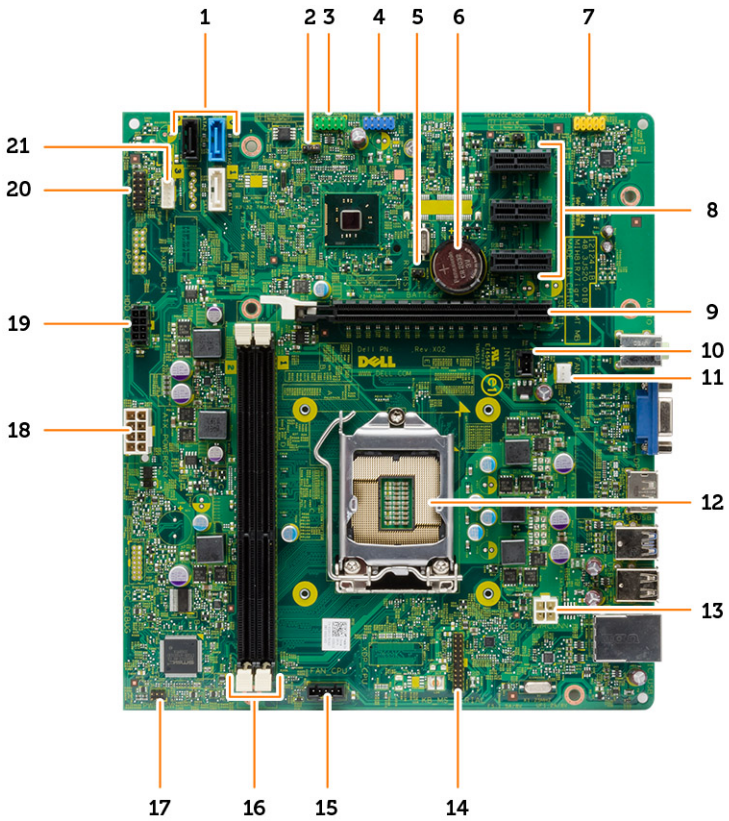
Installing the I/O Panel

1. Insert the I/O panel into the slot on the chassis front.
2. Slide the I/O panel towards the right of the computer to secure to the chassis.
3. Tighten the screw to secure the I/O panel to the chassis.
4. Thread the I/O panel and USB data cable into the chassis clip.
5. Connect the I/O panel and USB data cable to the system board.
6. Install :
   a) front bezel
   b) cover

7. Follow the procedures in *After Working Inside Your Computer*.

System Board Components

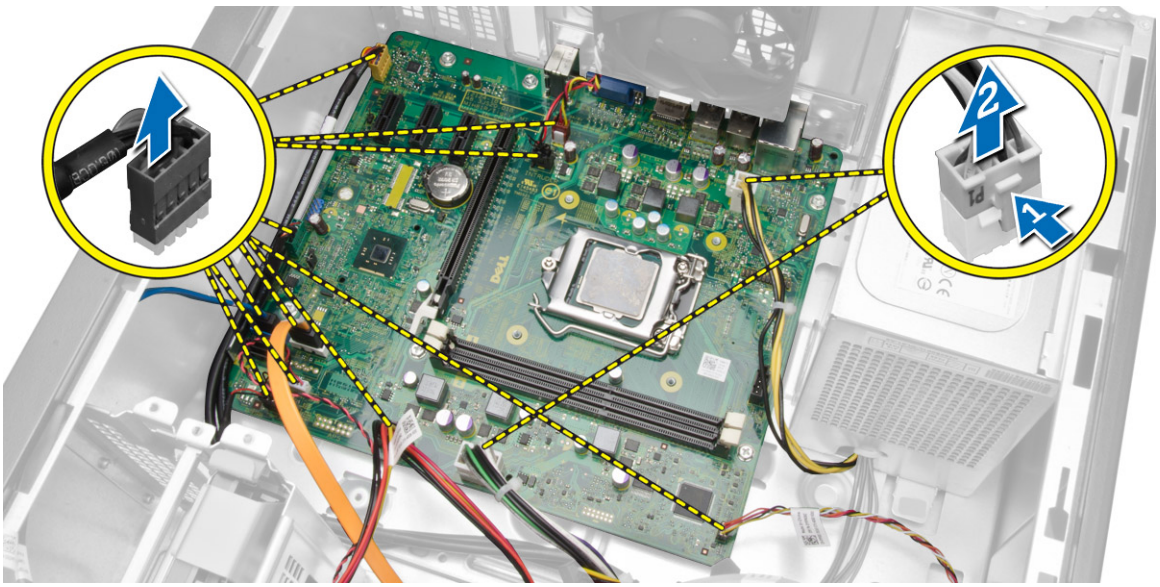
The following image displays the system board layout.



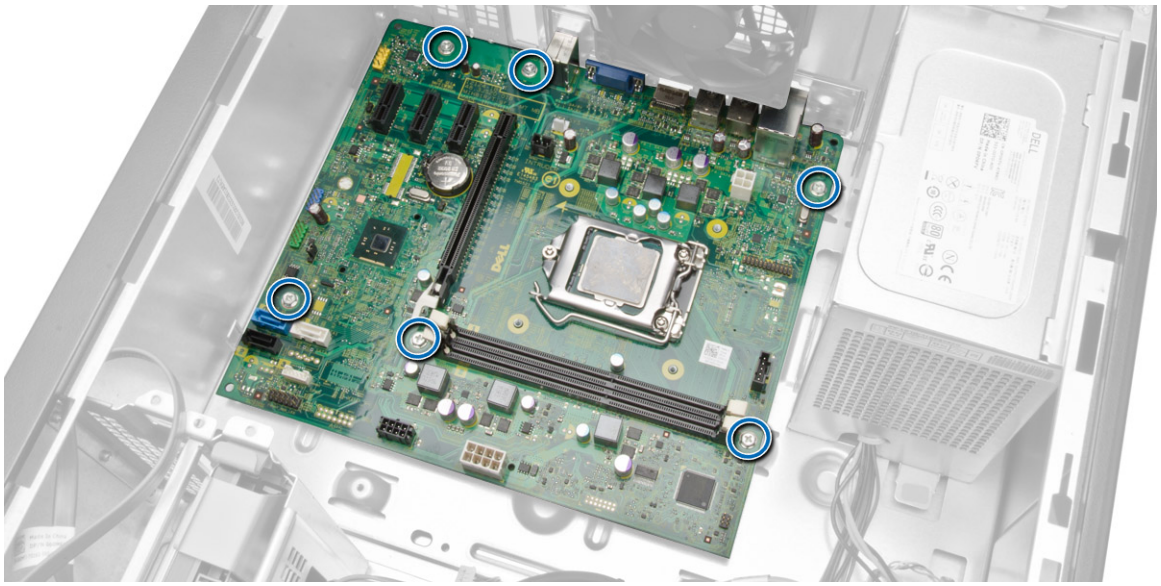
1. SATA connectors
2. password reset jumper
3. front USB2.0 connector
4. internal USB connector
5. RTCRST reset jump
6. coin-cell battery
7. front audio connector
8. PCI-ex1 connector
9. PCI-ex16 connector
10. intrusion switch connector
11. system fan connector
12. processor socket
13. cpu power connector
14. PS2 serial port connector
15. cpu fan connector
16. memory connector
17. power switch connector
18. ATX power connector
19. HDD_ODD power cable connector
20. HDD_LED connector
21. speaker connector

Removing the System Board

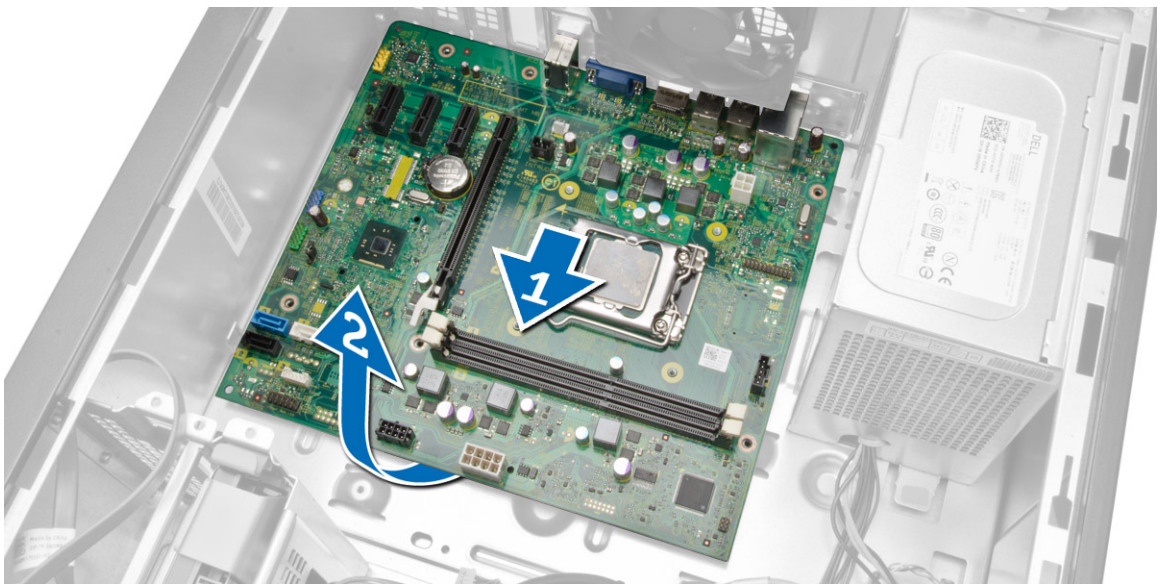
1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove the:
   a) cover
   b) memory
   c) expansion card(s)
   d) heatsink assembly
   e) processor
3. Disconnect all the cables connected to the system board.
4. Perform the following steps as shown in the illustration:
   a) Disconnect the 8–pin power cable.
   b) Press the 4–pin power cable [1].
   c) Disconnect the 4-pin power cables from the system board [2].



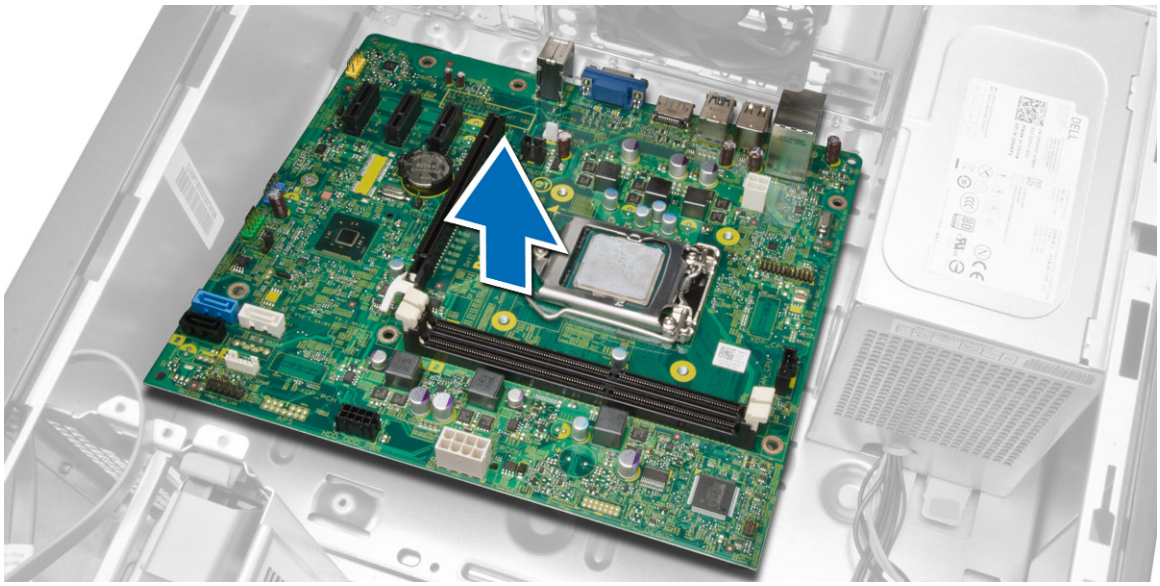
5. Remove the screws that secure the system board to the computer.



6. Tilt the system board at 45–degrees, and then lift the system board out of the computer.



7. Lift the system board out of the computer.



Installing the System Board

1. Align the system board to the port connectors on the rear of the chassis and place the system board in the chassis.
2. Tighten the screws that secure the system board to the chassis.
3. Connect the cables to the system board.
4. Install all the cables:
   a) processor
   b) heatsink assembly
   c) expansion card
   d) memory
   e) cover
5. Follow the procedures in *After Working Inside Your Computer*.

3

System Setup

System Setup enables you to manage your computer hardware and specify BIOS-level options. From the System Setup, you can:

- Change the NVRAM settings after you add or remove hardware
- View the system hardware configuration
- Enable or disable integrated devices
- Set performance and power management thresholds
- Manage your computer security

Boot Sequence

Boot Sequence allows you to bypass the System Setup-defined boot device order and boot directly to a specific device (for example: optical drive or hard drive). During the Power-on Self Test (POST), when the Dell logo appears, you can:

- Access System Setup by pressing <F2> key
- Bring up the one-time boot menu by pressing <F12> key

The one-time boot menu displays the devices that you can boot from including the diagnostic option. The boot-menu options are:

- Removable Drive (if available)
- STXXXX Drive

  NOTE: XXX denotes the SATA drive number.
- Optical Drive
- Diagnostics

  NOTE: Choosing Diagnostics, will display the **ePSA diagnostics** screen.

The boot sequence screen also displays the option to access the System Setup screen.

Navigation Keys

The following table displays the system setup navigation keys.

NOTE: For most of the system setup options, changes that you make are recorded but do not take effect until you re-start the system.

Table 1. Navigation Keys

Keys	Navigation
Up arrow	Moves to the previous field.
Down arrow	Moves to the next field.
<Enter>	Allows you to select a value in the selected field (if applicable) or follow the link in the field.
Spacebar	Expands or collapses a drop-down list, if applicable.
<Tab>	Moves to the next focus area. **NOTE:** For the standard graphics browser only.
<Esc>	Moves to the previous page till you view the main screen. Pressing <Esc> in the main screen displays a message that prompts you to save any unsaved changes and restarts the system.
<F1>	Displays the System Setup help file.

System Setup Options

NOTE: Depending on your computer and its installed devices, the items listed in this section may or may not appear.

Table 2. General

Option	Description
System Board	This section lists the primary hardware features of your computer. • System Information • Memory Information • PCI Information • Processor Information • Device Information
Boot Sequence	Allows you to change the order in which the computer attempts to find an operating system. • **Boot Sequence** • Diskette drive • SATA HDD Drive • USB Storgae Device • CD/DVD/CD-RW Drive • Onboard NIC • **Boot List Option** • Allows you to change the boot list option. – Legacy

Option	Description
	– UEFI
Advanced Boot Options	Allows you to Enable Legacy Option ROMs • **Enabled** (Default)
Date/Time	Allows you to set the date and time. The changes to the system date and time takes effect immediately.

Table 3. System Configuration

Option	Description
Integrated NIC	Allows you to configure the integrated network controller. The options are: • Disabled • Enable UEFI Network Stack • Enabled • **Enabled w/PXE** (Default) • Enabled w/Cloud Desktop
Serial Port	Identifies and defines the serial port settings. You can set the serial port to: • **Disabled**(Default) • COM1 • COM2 • COM3 • COM4 **NOTE:** The operating system may allocate resources even if the setting is disabled.
SATA Operation	Allows you to configure the internal SATA hard-drive controller. The options are: • Disabled • ATA • **AHCI** (Default)
Drives	Allows you to enable or disable the various drives on-board: • SATA-0 • SATA-1 • SATA-2 Default Setting: **All drives are enabled.**
SMART Reporting	This field controls if the hard drive errors for the integrated drives are reported during system startup. This technology is

Option	Description
	part of the SMART (Self Monitoring Analysis and Reporting Technology) specification. • **Enable SMART Reporting** - This option is disabled by default.
USB Configuration	Allows you to enable or disable the internal USB configuration. The options are: • Enable Boot Support • Enable Front USB Ports • Enable USB 3.0 Ports • Enable Rear Dual USB 2.0 Ports • Enable Dual USB 2.0 Ports (Under LAN ports)
Audio	Allows you enable or disable the audio feature. Default Setting: **Audio is enabled**

Table 4. Video

Option	Description
Multi-Display	Allows you to enables or disables Multi-Display, it should be enabled for windows 7 32/64bit or later only. • Disable Multi Display

Table 5. Security

Option	Description
Admin Password	This field lets you set, change, or delete the administrator (admin) password (sometimes called the setup password). The admin password enables several security features. The drive does not have a password set by default. • Enter the old password • Enter the new password • Confirm the new password
System Password	This field lets you set, change, or delete the system password. The system password enables several security features. The drive does not have a password set by default. • Enter the old password • Enter the new password • Confirm the new password
Internal HDD_0 Password	Allows you to set, change, or delete the password on the computer's internal hard disk drive (HDD) Successful change to this password take effect immediately. The drive does not have a password set by default • Enter the old password

Option	Description
	• Enter the new password • Confirm the new password
Strong Password	**Enable strong password** - This option is disabled by default.
Password Configuration	This field controls the minimum and maximum number of characters allowed for the admin and system passwords. • Admin Password Min • Admin Password Max • System Password Min • System Password Max
Password Bypass	Allows you to bypass the *System Password* and the internal HDD password prompts during a system restart. • Disabled - Always prompt for the system and internal HDD password when they are set. This option is disabled by default. • Reboot Bypass - Bypass the password prompts on restarts (warm boots). **NOTE:** The system will always prompt for the system and internal HDD passwords when powered on from the off state (a cold boot). Also, the system will always prompt for passwords on any module bay HDDs that may be present.
Password Change	Allows you to determine whether changes to the system and hard disk passwords are permitted when an administrator password is set. • **Allow Non-Admin Password Changes** - This option is enabled by default.
TPM Security	This option lets you control whether the Trusted Platform Module (TPM) in the system is enabled and visible to the operating system. **TPM Security** - This option is disabled by default. **TPM ACPI Support** **TPM PPI Deprovision Override** **Clear** **TPM PPI Provision Override** **NOTE:** Activation, deactivation, and clear options are not affected if you load the setup program's default values. Changes to this option take effect immediately.
Computrace	This field lets you activate or disable the BIOS module interface of the optional *Computrace Service* from *Absolute Software*. • **Deactivate** - This option is disabled by default. • Disable • Activate
Chassis Intrusion	• **Disable** - This option is disabled by default. • On-Silent

Option	Description
CPU XD Support	Allows you to enable or disable the execute disable mode of the processor. • **Enable CPU XD Support** - This option is enabled by default.
Admin Setup Lockout	Allows you to enable or disable the option to enter setup when an admin password is set. • **Enable Admin Setup Lockout** - This option is not set by default.
HDD Protection Support	Allows you to enable or disable the HDD Protection feature • HDD Protection Support**Disable** - This option is disabled by default.

Table 6. Secure Boot

Option	Description
Secure Boot Enable	Allows you to enable or disable the Secure Boot Feature. The options are: • **Disabled** (Default) • Enabled
Expert Key Management	Allows you to manipulate the security key databases only if the system is in Custom Mode. The **Enable Custom Mode** option is disabled by default. The options are: • PK • KEK • db • dbx If you enable the **Custom Mode**, the relevant options for **PK, KEK, db, and dbx** appear. The options are: • **Save to File**- Saves the key to a user-selected file • **Replace from File**- Replaces the current key with a key from a user-selected file • **Append from File**- Adds a key to the current database from a user-selected file • **Delete**- Deletes the selected key • **Reset All Keys**- Resets to default setting • **Delete All Key**s- Deletes all the keys

Option	Description
	NOTE: If you disable the Custom Mode, all the changes made will be erased and the keys will restore to default settings.

Table 7. Performance

Option	Description
Multi Core Support	Specifies whether the process will have one or all cores enabled. The performance of some applications will improve with the additional cores. • All - Enabled by default • 1 • 2
Intel SpeedStep	Allows you to enable or disable the Intel SpeedStep feature. Default Setting: **Enable Intel SpeedStep**
C States Control	Allows you to enable or disable the additional processor sleep states. Default Setting:**Enabled**
Limit CPUID Value	This field limits the maximum value the processor Standard CPUID Function will support • Disable CPUID Limit **NOTE:** Some Operating system will not complete installation when the maximum CPUID Function is greater than 3
HyperThread control (SFF)	Allows you to enable or disable the Hyper-Threading Technology. This option is enabled by default.

Table 8. Power Management

Option	Description
AC Recovery	Specifies how the computer will respond when AC power is applied after a AC power loss. You can set the AC Recovery to: • **Power Off** (Default) • Power On • Last Power State
Auto On Time	Allows you to set the time at which the computer must turn on automatically. The options are: • **Disabled** (Default)

Option	Description
	• Every Day • Weekdays • Select Days
Deep Sleep Control	Allows you to define the controls when Deep Sleep is enabled. • Disabled • Enabled in S5 only • **Enabled in S4 and S5** Enabled
Fan Speed Control	Controls the speed of the system fan. This option is disabled by default. **NOTE:** When enabled, the fan runs at full speed.
USB Wake Support	This option allows you to enable USB devices to wake the computer from standby. • **Enable USB Wake Support** - This option is enabled by default.
Wake on LAN	This option allows the computer to power up from the off state when triggered by a special LAN signal. Wake-up from the Standby state is unaffected by this setting and must be enabled in the operating system. This feature only works when the computer is connected to AC power supply. The options differ based on the form factor. • **Disabled** - Does not allow the system to power on by special LAN signals when it receives a wake-up signal from the LAN or wireless LAN. • **LAN Only** - Allows the system to be powered on by special LAN signals. • **LAN or PXE Boot** - Allows the system to be powered on by special LAN or PXE Bootsignals. (For Ultra Small Form Factor only) This option is Disabled by default.
Block Sleep	Allows you to block entering to sleep (S3 state) in OS Environment. Default Setting: **Disabled**
Intel Smart Connect Technology	The option is disabled by default. If option enables will periodically sense nearby wireless connection while the system is asleep. It will synchronize emails or social media application that were open when system entered the sleep state. • Smart Connection

Table 9. POST Behavior

Option	Description
Numlock LED	Specifies if the NumLock function can be enabled when the system boots. This option is enabled by default.
Keyboard Errors	Specifies whether keyboard related errors are reported when it boots. This option is enabled by default.

Table 10. Virtualization Support

Option	Description
Virtualization	This option specifies whether a Virtual Machine Monitor (VMM) can utilize the additional hardware capabilities provided by Intel Virtualization technology. • **Enable Intel Virtualization Technology** - This option is enabled by default.

Table 11. Maintenance

Option	Description
Service Tag	Displays the service tag of your computer.
Asset Tag	Allows you to create a system asset tag if an asset tag is not already set. This option is not set by default.
SERR Messages	Controls the SERR message mechanism. This option is not set by default. Some graphics cards require that the SERR message mechanism be disabled.

Table 12. Cloud Desktop

Option	Description
Server Lookup Method	Specifies how the ImageServer looks up the server address. • Static IP • DNS (enabled by default) **NOTE:** This field is only relevant when the *Integrated NIC* control in the *System Configuration* group is set to *Enabled with ImageServer*.
Server IP Address	Specifies the primary static IP address of the ImageServer with which the client software communicates. The default IP address is **255.255.255.255**. **NOTE:** This field is only relevant when the *Integrated NIC* control in the *System Configuration* group is set to *Enabled with ImageServer* and when *Lookup Method* is set to *Static IP*.
Server Port	Specifies the primary IP port of the ImageServer, which is used by the client to communicate. The default IP port is **06910**. **NOTE:** This field is only relevant when the *Integrated NIC* control in the *System Configuration* group is set to *Enabled with ImageServer*.
Client Address Method	Specifies how the client obtains the IP address. • Static IP • DHCP (enabled by default) **NOTE:** This field is only relevant when the *Integrated NIC* control in the *System Configuration* group is set to *Enabled with ImageServer*.
Client IP Address	Specifies the static IP address of the client. The default IP address is **255.255.255.255**. **NOTE:** This field is only relevant when the *Integrated NIC* control in the *System Configuration* group is set to *Enabled with ImageServer* and when *Client DHCP* is set to *Static IP*.

Option	Description
Client SubnetMask	Specifies the subnet mask of the client. The default setting is **255.255.255.255**. **NOTE:** This field is only relevant when the *Integrated NIC* control in the *System Configuration* group is set to *Enabled with ImageServer* and when *Client DHCP* is set to *Static IP*.
Client Gateway	Specifies the gateway IP address for the client. The default setting is **255.255.255.255**. **NOTE:** This field is only relevant when the *Integrated NIC* control in the *System Configuration* group is set to *Enabled with ImageServer* and when *Client DHCP* is set to *Static IP*.
Advanced	Specifies for Advanced debugging • **Verbose Mode** (Disabled) **NOTE:** This Option is only relevant when the integrated NIC control in the System Configuration group is set to enable with Cloud Desktop.

Table 13. System Logs

Option	Description
BIOS events	Displays the system event log and allows you to clear the log. • Clear Log

Updating the BIOS

It is recommended to update your BIOS (system setup), on replacing the system board or if an update is available. For laptops, ensure that your computer battery is fully charged and connected to a power outlet

1. Re-start the computer.
2. Go to **dell.com/support**.
3. Enter the **Service Tag** or **Express Service Code** and click **Submit**.

   NOTE: To locate the Service Tag, click **Where is my Service Tag?**

   NOTE: If you cannot find your Service Tag, click **Detect Service Tag**. Proceed with the instructions on screen.
4. If you are unable to locate or find the Service Tag, click the Product Category of your computer.
5. Choose the **Product Type** from the list.
6. Select your computer model and the **Product Support** page of your computer appears.
7. Click **Drivers & Downloads**.
8. On the Drivers and Downloads screen, under the **Operating System** drop-down list, select **BIOS**.
9. Identify the latest BIOS file and click **Download File**.
10. Select your preferred download method in the **Please select your download method below window**; click **Download File**.

    The **File Download** window appears.

11. Click **Save** to save the file on your computer.
12. Click **Run** to install the updated BIOS settings on your computer.
    Follow the instructions on the screen.

Clearing Forgotten Password

The system's software security features include a system password and a setup password. The password jumper disables any password(s) currently in use. There are 3–pins for the password reset jumper.

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove the cover.
3. Identify the password reset jumper on the system board, see the System Board Components.
4. Remove the 2-pin jumper plug from pins 2 and 3 and fix it on pins 1 and 2
5. Install the cover.
6. Connect the computer to the electrical outlet and power-on the computer to clear the password.
7. Power-off the computer and disconnect the power cable from the electrical outlet.
8. Remove the cover.
9. Replace the jumper on the pins 2 and 3.
10. Install the cover.
11. Follow the procedures in *After Working Inside Your Computer*.
12. Power-on the computer.
13. Go to the system setup, and assign a new system or setup password.

Clearing CMOS

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove the cover.
3. Remove the PCI card if installed.
4. Identify the CMOS jumper on the system board, see the System Board Components.
5. Place the 2-pin jumper plug on pins 1 and 2 to clear CMOS
6. Install PCI card if installed.
7. Install the cover.
8. Connect the computer to the electrical outlet and power-on the computer to clear the CMOS.
9. Power-off the computer and disconnect the power cable from the electrical outlet.
10. Remove the cover.
11. Replace the jumper on the pins 1 and 2.
12. Install PCI card if installed.
13. Install the cover.
14. Follow the procedures in *After Working Inside Your Computer*.
15. Power-on the computer.

System and Setup Password

You can create a system password and a setup password to secure your computer.

Password Type	Description
System password	Password that you must enter to log on to your system.
Setup password	Password that you must enter to access and make changes to the BIOS settings of your computer.

CAUTION: The password features provide a basic level of security for the data on your computer.

CAUTION: Anyone can access the data stored on your computer if it is not locked and left unattended.

NOTE: Your computer is shipped with the system and setup password feature disabled.

Assigning a System Password and Setup Password

You can assign a new **System Password** and/or **Setup Password** or change an existing **System Password** and/or **Setup Password** only when **Password Status** is **Unlocked**. If the Password Status is **Locked**, you cannot change the System Password.

NOTE: If the password jumper is disabled, the existing System Password and Setup Password is deleted and you need not provide the system password to log on to the computer.

To enter a system setup, press <F2> immediately after a power-on or re-boot.

1. In the **System BIOS** or **System Setup** screen, select **System Security** and press <Enter>.
   The **System Security** screen appears.
2. In the **System Security** screen, verify that **Password Status** is **Unlocked**.
3. Select **System Password** , enter your system password, and press <Enter> or <Tab>.
   Use the following guidelines to assign the system password:
   - A password can have up to 32 characters.
   - The password can contain the numbers 0 through 9.
   - Only lower case letters are valid, upper case letters are not allowed.
   - Only the following special characters are allowed: space, (“), (+), (,), (-), (.), (/), (;), ([), (\), (]), (`).

   Re-enter the system password when prompted.
4. Type the system password that you entered earlier and click **OK**.
5. Select **Setup Password**, type your system password and press <Enter> or <Tab>.
   A message prompts you to re-type the setup password.
6. Type the setup password that you entered earlier and click **OK**.
7. Press <Esc> and a message prompts you to save the changes.
8. Press <Y> to save the changes.
   The computer reboots.

Deleting or Changing an Existing System and/or Setup Password

Ensure that the **Password Status** is Unlocked (in the System Setup) before attempting to delete or change the existing System and/or Setup password. You cannot delete or change an existing System or Setup password, if the **Password Status** is Locked.

To enter the System Setup, press <F2> immediately after a power-on or reboot.

1. In the **System BIOS** or **System Setup** screen, select **System Security** and press <Enter>.
   The **System Security** screen is displayed.
2. In the **System Security** screen, verify that **Password Status** is **Unlocked**.
3. Select **System Password**, alter or delete the existing system password and press <Enter> or <Tab>.
4. Select **Setup Password**, alter or delete the existing setup password and press <Enter> or <Tab>.

   NOTE: If you change the System and/or Setup password, re-enter the new password when promoted. If you delete the System and/or Setup password, confirm the deletion when promoted.
5. Press <Esc> and a message prompts you to save the changes.
6. Press <Y> to save the changes and exit from the System Setup.
   The computer reboots.

Disabling a System Password

The system's software security features include a system password and a setup password. The password jumper disables any password(s) currently in use.

NOTE: You can also use the following steps to disable a forgotten password.

1. Follow the procedures in *Before Working on Your Computer*.
2. Remove the cover.
3. Identify the PSWD jumper on the system board.
4. Remove the PSWD jumper from the system board.

   NOTE: The existing passwords are not disabled (erased) until the computer boots without the jumper.
5. Install the cover.

   NOTE: If you assign a new system and/or setup password with the PSWD jumper installed, the system disables the new password(s) the next time it boots.
6. Connect the computer to the electrical outlet and power-on the computer.
7. Power-off the computer and disconnect the power cable from the electrical outlet.
8. Remove the cover.
9. Replace the PSWD jumper on the system board.
10. Install the cover.
11. Follow the procedures in *After Working on Your Computer*.
12. Power-on the computer.
13. Go to the system setup, and assign a new system or setup password. See *Setting up a System Password*.

4

Diagnostics

If you experience a problem with your computer, run the ePSA diagnostics before contacting Dell for technical assistance. The purpose of running diagnostics is to test your computer's hardware without requiring additional equipment or risking data loss. If you are unable to fix the problem yourself, service and support personnel can use the diagnostics results to help you solve the problem.

Enhanced Pre-Boot System Assessment (ePSA) Diagnostics

The ePSA diagnostics (also known as system diagnostics) performs a complete check of your hardware. The ePSA is embedded with the BIOS and is launched by the BIOS internally. The embedded system diagnostics provides a set of options for particular devices or device groups allowing you to:

- Run tests automatically or in an interactive mode
- Repeat tests
- Display or save test results
- Run thorough tests to introduce additional test options to provide extra information about the failed device(s)
- View status messages that inform you if tests are completed successfully
- View error messages that inform you of problems encountered during testing

CAUTION: Use the system diagnostics to test only your computer. Using this program with other computers may cause invalid results or error messages.

NOTE: Some tests for specific devices require user interaction. Always ensure that you are present at the computer terminal when the diagnostic tests are performed.

1. Power-on the computer.
2. As the computer boots, press the <F12> key as the Dell logo appears.
3. On the boot menu screen, select the **Diagnostics** option.
   The **Enhanced Pre-boot System Assessment** window is displayed, listing all devices detected in the computer. The diagnostics starts running the tests on all the detected devices.
4. If you wish to run a diagnostic test on a specific device, press <Esc> and click **Yes** to stop the diagnostic test.
5. Select the device from the left pane and click **Run Tests**.
6. If there are any issues, error codes are displayed.
   Note the error code and contact Dell.

5

Troubleshooting Your Computer

You can troubleshoot your computer using indicators like Diagnostic Lights, Beep Codes, and Error Messages during the operation of the computer.

Power LED Diagnostics

The power button LED located on the front of the chassis also functions as a bicolored diagnostic LED. The diagnostic LED is only active and visible during the POST process. Once the operating system starts to load, it is no longer visible.

Amber LED blinking scheme – The pattern is 2 or 3 blinks followed by a short pause then x number of blinks up to 7. The repeated pattern has a long pause inserted in the middle. For example 2,3 = 2 amber blinks, short pause, 3 amber blinks followed by long pause then repeats.

Table 14. Power LED Diagnostics

Amber LED State	White LED State	Description
off	off	system is OFF
off	breathing	system is in sleep state
blinking	off	power supply unit (PSU) failure
steady	off	PSU is working but failed to fetch code
off	steady	system is ON

Amber LED State	Description
2,1	system board failure
2,2	system board, PSU or PSU cabling failure
2,3	system board, memory or CPU failure
2, 4	coin-cell battery failure
2,5	corrupt BIOS
2,6	CPU configuration failure or CPU failure
2,7	memory modules are detected, but a memory failure
3,1	possible peripheral card or system board failure
3,2	possible USB failure
3,3	no memory modules are detected
3,4	possible system board error
3,5	memory modules are detected, but a memory configuration or compatibility error

Amber LED State	Description
3,6	possible system board resource and/or hardware failure
3,7	some other failure with messages on screen

Beep Code

The computer can emit a series of beeps during start-up if the display does not show errors or problems. These series of beeps, called beep codes, identify various problems. The delay between each beep is 300 ms, the delay between each set of beeps is 3 sec, and the beep sound lasts 300 ms. After each beep and each set of beeps, the BIOS should detect if the user presses the power button. If so, BIOS will jump out from looping and execute the normal shutdown process and power system.

Code	1-3-2
Cause	Memory failure

NOTE: 1. If the system is attached with an internal speaker we can hear the beep sound directly.

NOTE: 2. If the system does have an internal speaker, connect an external speaker to line out connection to hear the beep sound.

NOTE: User can also check the power LED behavior instead of the beep code for troubleshooting purpose.

Error Messages

Error Message	Description
Address mark not found	The BIOS found a faulty disk sector or could not find a particular disk sector.
Alert! Previous attempts at booting this system have failed at checkpoint [nnnn]. For help in resolving this problem, please note this checkpoint and contact Dell Technical Support.	The computer failed to complete the boot routine three consecutive times for the same error. Contact Dell and report the checkpoint code (nnnn) to the support technician
Alert! Security override Jumper is installed.	The MFG_MODE jumper has been set and AMT Management features are disabled until it is removed.
Attachment failed to respond	The floppy or hard drive controller cannot send data to the associated drive.

Error Message	Description
Bad command or file name	Ensure that you have spelled the command correctly, put spaces in the proper place, and used the correct pathname.
Bad error-correction code (ECC) on disk read	The floppy or hard drive controller detected an uncorrectable read error.
Controller has failed	The hard drive or the associated controller is defective.
Data error	The floppy or hard drive cannot read the data. For the Windows operating system, run the chkdsk utility to check the file structure of the floppy or hard drive. For any other operating system, run the appropriate corresponding utility.
Decreasing available memory	One or more memory modules may be faulty or improperly seated. Re-install the memory modules and, if necessary, replace them.
Diskette drive 0 seek failure	A cable may be loose or the computer configuration information may not match the hardware configuration.
Diskette read failure	The floppy disk may be defective or a cable may be loose. If the drive access light turns on, try a different disk.
Diskette subsystem reset failed	The floppy drive controller may be faulty.
Gate A20 failure	One or more memory modules may be faulty or improperly seated. Reinstall the memory modules and, if necessary, replace them.
General failure	The operating system is unable to carry out the command. This message is usually followed by specific information—for example, **Printer out of paper**. Take the appropriate action to resolve the problem.
Hard-disk drive configuration error	The hard drive failed initialization.
Hard-disk drive controller failure	The hard drive failed initialization.
Hard-disk drive failure	The hard drive failed initialization.
Hard-disk drive read failure	The hard drive failed initialization.
Invalid configuration information-please run SETUP program	The computer configuration information does not match the hardware configuration.
Invalid Memory configuration,	DIMM1 slot does not recognize a memory module. The module should be re-seated or installed.

Error Message	Description
please populate DIMM1	
Keyboard failure	A cable or connector may be loose, or the keyboard or keyboard/mouse controller may be faulty.
Memory address line failure at address, read value expecting value	A memory module may be faulty or improperly seated. Reinstall the memory modules and, if necessary, replace them.
Memory allocation error	The software you are attempting to run is conflicting with the operating system, another program, or a utility.
Memory data line failure at address, read value expecting value	A memory module may be faulty or improperly seated. Reinstall the memory modules and, if necessary, replace them.
Memory double word logic failure at address, read value expecting value	A memory module may be faulty or improperly seated. Reinstall the memory modules and, if necessary, replace them.
Memory odd/even logic failure at address, read value expecting value	A memory module may be faulty or improperly seated. Reinstall the memory modules and, if necessary, replace them
Memory write/ read failure at address, read value expecting value	A memory module may be faulty or improperly seated. Reinstall the memory modules and, if necessary, replace them.
Memory size in CMOS invalid	The amount of memory recorded in the computer configuration information does not match the memory installed in the computer.
Memory tests terminated by keystroke	A keystroke interrupted the memory test.
No boot device available	The computer cannot find the floppy disk or hard drive.
No boot sector on hard-disk drive	The computer configuration information in System Setup may be incorrect.
No timer tick interrupt	A chip on the system board might be malfunctioning.

Error Message	Description
Non-system disk or disk error	The floppy disk in drive A does not have a bootable operating system installed on it. Either replace the floppy disk with one that has a bootable operating system, or remove the floppy disk from drive A and restart the computer.
Not a boot diskette	The operating system is trying to boot to a floppy disk that does not have a bootable operating system installed on it. Insert a bootable floppy disk.
Plug and play configuration error	The computer encountered a problem while trying to configure one or more cards.
Read fault	The operating system cannot read from the floppy or hard drive, the computer could not find a particular sector on the disk, or the requested sector is defective.
Requested sector not found	The operating system cannot read from the floppy or hard drive, the computer could not find a particular sector on the disk, or the requested sector is defective.
Reset failed	The disk re-set operation failed.
Sector not found	The operating system cannot locate a sector on the floppy or hard drive.
Seek error	The operating system cannot find a specific track on the floppy disk or hard drive.
Shutdown failure	A chip on the system board might be malfunctioning.
Time-of-day clock stopped	The battery might be dead.
Time-of-day not set-please run the System Setup program	The time or date stored in System Setup does not match the computer clock.
Timer chip counter 2 failed	A chip on the system board may be malfunctioning.
Unexpected interrupt in protected mode	The keyboard controller may be malfunctioning or a memory module may be loose.
WARNING: Dell's Disk Monitoring System has detected that drive [0/1] on the [primary/ secondary] EIDE controller is operating outside of normal specifications. It is advisable to immediately back up your data and replace your hard	During initial startup, the drive detected possible error conditions. When your computer finishes booting, immediately back up your data and replace your hard drive (for installation procedures, see "Adding and Removing Parts" for your computer type). If no replacement drive is immediately available and the drive is not the only bootable drive, enter System Setup and change the appropriate drive setting to **None**. Then remove the drive from the computer.

Error Message	Description
drive by calling your support desk or Dell.	
Write fault	The operating system cannot write to the floppy or hard drive.
Write fault on selected drive	The operating system cannot write to the floppy or hard drive.

6

Technical Specifications

NOTE: Offerings may vary by region. The following specifications are only those required by law to ship with your computer. For comprehensive specification of your computer go to **Specifications'** section in your **Owner's Manual** available on the support site at **dell.com/support**. For more information about the configuration of your computer, go to **Help and Support** in your Windows operating system and select the option to view information about your computer.

Table 15. Processor

Feature	Specification
Type	Core™ I5-4570 Processor (Quad Core, 3.20GHz Turbo, 6MB, w/ HD Graphics 4600)/Core™ i3-4130 Processor (Dual Core, 3.4GHz, 3MB w/ HD Graphics 4400)/Pentium® G3220 Processor (Dual Core, 3.0GHz, 3MB w/ HD Graphics)
Cache	Core™ I5-4570 Processor (6MB)/Core™ i3-4130 Processor (3MB)/Pentium® G3220 Processor (3MB)

Table 16. System Information

Feature	Specification
Chipset	Intel H81 Chipset
BIOS chip (NVRAM)	64Mbit (8MB)

Table 17. Memory

Feature	Specification
Type	DDR3 Synch DRAM Non-ECC Memory
Speed	1600MHz
Connectors:	2 DDR connectors on MB
Capacity	Up to 8 GB
Minimum Memory	2 GB
Maximum memory:	16GB

Table 18. Video

Feature	Specification
Integrated	HD Graphics 4600/ HD Graphics 4400/ HD Graphics,base on CPU Type
Discrete	AMD Radeon HD8570 or AMD Radeon HD8490

Table 19. Audio

Feature	Specification
Integrated	Realtek ALC3220 High Definition Audio, Line in(MIC)/Line out port on rear side and MIC/HP on front I/O side

Table 20. Network

Feature	Specification
Integrated	Realtek RTL8151GD GIGABIT ETHERNET LAN 10/100/1000

Table 21. System Information

Feature	Specification
System chipset	Intel H81 Chipset
DMA Channels	Seven Programmable Channels
Interrupt Levels	
BIOS Chip (NVRAM)	64Mbit (8MB)

Table 22. Expansion Bus

Feature	Specification
Bus Type	PCIex16 *1/PCIex1 *3
Bus Speed:	PCIex16 support Gen2 5Gbps/PCIex1 support gen 2 5Gbps

Table 23. Drives

Feature	Specification
Externally accessible:	ODD is externally accessible
Internally accessible	HDD is internally accessible

Table 24. External Connectors

Feature	Specification
Audio	Line in(MIC)/Line out port on rear side and MIC/HP on front I/O side
Front Panel	USB2.0 *2 and MIC*1 /HP *1 supported on front pannel
Back Panel	VGA *1/DP*1/RJ45*1/USB3.0*2/USB2.0*4/Line in(MIC) *1/ Line out *1
Network Adapter	support Broadcom NetXtreme 10/100/1000 PCIe Gigabit Networking Card
Serial	support Serial / PS/2 Add-in Bracket or Serial / Parallel Port PCIe Add-in Card
Parallel	Serial / Parallel Port PCIe Add-in Card
USB	USB 2.0 (Front / Rear / Internal) is 2 /4 /1 and USB 3.0 (Front / Rear / Internal) is 0 / 2 / 0

Feature	Specification
Video	VGA and DP output support on rear I/O side

Table 25. Internal Connectors

Feature	Specification
System power	single power rail 290 W PSU(4 pin cable for CPU power/ 8 Pin cable for system power)
System fans	1 system FAN connector on rear side
Processor fans	1 CPU FAN connector near CPU
HDD fans	N/A
Memory	2 DDR slot supported
Processor	Intel LGA1150 CPU socket
Back I/O:	VGA *1/DP*1/RJ45*1/USB3.0*2/USB2.0*4/Line in(MIC) *1/ Line out *1
Front I/O:	USB2.0 *2 and MIC*1 /HP *1 supported on front panel
Hard drive/ Optical drive:	
SATA	3 SATA supported(2 SATA Gen3 for HDD. 1 SATA Gen2 for ODD)
Power	single power rail 290W PSU

Table 26. Controls and Lights

Feature	Specification
Front of the computer:	
Power button light	White light — Solid white light indicates power-on state; Breathing white light indicates sleep state of the computer.
Drive activity light	White light — Blinking white light indicates that the computer is reading data from or writing data to the hard drive
Back of the computer:	
Link integrity light on integrated network adapter	Green — a good 10 Mbps connection exists between the network and the computer.
	Green — a good 100 Mbps connection exists between the network and the computer.
	Orange — a good 1000 Mbps connection exists between the network and the computer.
	Off (no light) — the computer is not detecting a physical connection to the network.
Network activity light on integrated network adapter	Yellow light — A blinking yellow light indicates that network activity is present.
Power supply diagnostic light	Green light — The power supply is turned on and is functional. The power cable must be connected to the

Feature	Specification
	power connector (at the back of the computer) and the electrical outlet.

Table 27. Power

Feature	Specification
Coin-cell battery	3V Lithium CR2032
Voltage	100 VAC to 240 VAC
Wattage	290W
Maximum heat dissipation	N/A

NOTE: Heat dissipation is calculated by using the power supply wattage rating.

Table 28. Physical

Feature	Specification
Physical	26.27 liters
Height	360 mm
Width	175 mm
Depth	417 mm
Weight	7.6 Kgs

Table 29. Environmental

Feature	Specification
Temperature:	
Operating	0 degree to 35 degree
Storage	'-40 degree to 65 degree
Relative humidity (maximum):	
Operating	20 R.H. to 80 R.H.
Storage	20 R.H. to 95 R.H.
Maximum vibration:	
Operating	0.26Grms
Storage	1.37Grms
Maximum shock:	
Operating	40G/2ms
Storage	50G/19ms
Altitude:	
Operating	–15.2 m to 3048 m (–50 to 10,000 ft)
Storage	–15.20 m to 10,668 m (–50 ft to 35,000 ft)

Feature	Specification
Airborne contaminant level	G1 or lower as defined by ANSI/ISA-S71.04-1985

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Contacting Dell

NOTE: Dell provides several online and telephone-based support and service options. If you do not have an active Internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell product catalog. Availability varies by country and product, and some services may not be available in your area.

To contact Dell for sales, technical support, or customer-service issues:

1. Go to **dell.com/contactdell**.
2. Select your country or region from the interactive world map.
   When you select a region, the countries for the selected regions are displayed.
3. Select the appropriate language under the country of your choice.
4. Select your business segment.
   The main support page for the selected business segment is displayed.
5. Select the appropriate option depending on your requirement.

NOTE: If you have purchased a Dell system, you may be asked for the Service Tag.